

Information Theory and the Central Limit Theorem by **Oliver Johnson**
Errata

This is a list of known typos/errors in the book, last updated at January 28, 2013. Please get in touch at maotj@bristol.ac.uk when you spot any more.

1. P.6 L2 density p not f
2. P.10, Lemma 1.7: the p and q got mixed up. The Lemma should read:
For X_1, \dots, X_n a collection of independent identically distributed Bernoulli(q),
for any $1 > p > q > 0$:

$$-\lim_{n \rightarrow \infty} \frac{1}{n} \log \mathbb{P} \left(\frac{\sum_{i=1}^n X_i}{n} \geq p \right) = (1-p) \log \left(\frac{1-p}{1-q} \right) + p \log \left(\frac{p}{q} \right),$$

the relative entropy distance from a Bernoulli(p) to a Bernoulli(q).

3. P.142, L2: There should be no squares on α_X and α_Y .
4. P.166, Equation (8.74) requires the condition that $\mathbb{E}g(Y) = 0$.
5. P.183, Equation (C.3) should read:

$$\frac{\partial f_\tau}{\partial \tau}(x) = \int f(y) \frac{\partial \phi_\tau}{\partial \tau}(x-y) dy = \frac{1}{2} \int f(y) \frac{\partial^2 \phi_\tau}{\partial^2 x}(x-y) dy = \frac{1}{2} \frac{\partial^2 f_\tau}{\partial^2 x}(x).$$

6. P.185, the first term of Equation (C.14) should be

$$\frac{\log e}{2} \int \text{tr}(C(B + C\tau)^{-1} J_{\text{st}}(\mathbf{Y}_\tau)) d\tau,$$

and Equation (C.15) should be

$$\frac{\log e}{2} \int \frac{\text{tr}(J_{\text{st}}(\mathbf{Y}_\tau))}{1 + \tau} d\tau.$$

7. P.197, Equation (E.38) should start

$$D(g \parallel \phi) \dots$$

Thanks to Yiannis Kontoyiannis, Dimitri Shlyakhtenko, Yvik Swan and Kit Withers for pointing out some of these mistakes.